Polymerization of styrene and

agents (without metals of variable valency). Monoethanolamine, dioxy-acetone (V), sodium bisulfite, and the bisulfite compound of acetone were additional reducing agents. Their effect was investigated with systems of two HP of different initiating activity and two complex compounds of bivalent iron. The ratio hydrocarbons (70 % by weight of styrene 30 % by weight of butadiene):water was 1:4. 2.8 % by weight of emulsifier (Nekal, Mersolate) were used. Optimum rate of polymerization was established at 0.34 % by weight of HP I and 0.2 % by weight of HP II (related to monomer). At the copolymerization butadiene-styrene by means of HP I + III, the optimum rate of polymerization was established for $FeSO_4 \cdot 7H_2O$ and $Na_4P_2O_7 \cdot 10H_2O \cdot 0.75 : 1$. Increase of the concentration of III from 0.35 to 0.70 moles/mole of HP I accelerates the process considerably. After 4 hr, the polymer yield increases to ~ 48 % at an increase of III from 0.2-0.35 moles/mole of hydrogen peroxide, and to 65 % at a further increase. At 5°C, additional reducing agents hardly affect the rate of polymerization. At 20°C, addition of V to I + III causes polymerization acceleration and 75 % monomer conversion after 3 hr, which is only 40 % without V. In the system II and III, optimum polymer yield is achieved at 1.5 moles of III per mole of HP II. For IV, an optimum yield

Card 2/3

Polymerization of styrene and...

29742
S/190/61/003/011/014/017
B110/B147

is achieved after 4 hr at a ratio 0.5 IV : 1 HP. The high rate of polymerization for systems with III is caused by the low solubility of III in water. The redox potential of III is -200 mv. In dissolved state, it reacts with HP, but dissolves only slowly. This causes the great depth of conversion. IV with high positive potential (420 mv) is soluble in water. The rate of initiating is determined by interaction of HP with IV. Polymerization is not initiated during the unproductive reaction of well soluble $NaHSO_3$ and well soluble HP I. $NaHSO_3$ and poorly soluble HP II initiate polymerization. The effect of IV on III at 20°C consists in the regeneration of the Fe^{2+} from the Fe^{3+} ions, whereby the depth of conversion increases. There are a number of tables. There are ...

✗

ACCESSION NR: AP4012181

AUTHORS: Abkin, A. D.; Auer, A. L.; Bregor, A. Kh.;
B. I.; Voropayev, Yu. V.; Gol'din, V. A.;
Osipov, V. B.; Syrkus, ; Ushakov, V. B.;
P. M.; Tsingister, V. A.; ; Ushakov, V. B.;

S/0191/64/000/002/0003/0006

TITLE: Radiation polymerization of ethylene in enlarged laboratory
apparatus.

SOURCE: Plasticheskiye massy*, no. 2, 1964, 3-6

TOPIC TAGS: ethylene, radiation polymerization, reactor design,
reactor surface area, reaction rate, polymer yield, reactor temperature field

ABSTRACT: Radiation polymerization of ethylene was conducted in
laboratory reactors of 1-2 liter capacity (fig. 1 & 2). Based on
tolerances admitted in this work, it was found that the temperature
field can be calculated with sufficient accuracy. Comparison of
reaction rates and yield of ethylene polymer shows that these factors
are independent of the specific surface of the reaction space. Thus

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ACCESSION NR: AP4012181

commercial scale apparatus can be designed by estimating the process rate and yield dependence on pressure, temperature and dosage rate without concern for specific surface area of the reactor. Orig. art. has: 1 Table and 5 Figures

ASSOCIATION: None

SUBMITTED: 00

SUB CODE: MA

DATE ACQ: 26Feb64

NR REF SOV: 005

ENCL: 02

OTHER: 003

Card 2/#2

USHAKOV, V.D.; MATVEYEVA, A.V.; SLOVOKHOTOVA, N.A.; KHOMIKOVSKIY, P.M.;
ABKIN, A.D.

Radiation polymerization of diketone in the solid and liquid states.
Vysokom.soed. 7 no.7:1165-1170 Jl '65.

(MIRA 18:8)

1. Fiziko-khimicheskiy institut imeni Karpova.

ROMANETS, R.G.; ALYAB'YEV, V.A.; USHAKOV, V.F.; BOBYL', V.G.

Cryostat for investigating the electric, photoelectric, and optical properties of liquids. Zav. lab. 31 no.9:1091 '65. (MIRA 18:10)

1. Dnepropetrovskiy inzhenerno-stroitel'nyy institut.

USHAKOV, V.G.

Rabies of dogs and Pasteurian antirabic vaccinations. Trudy Len.
inst.epid. i mikrobiol. 9:202-222 '47.   (MIRA 10:9)

1. Iz antirabicheskogo otdela Instituta im. Pastera (zav. otd.
S.A.Baranovskaya)
        (RABIES--PREVENTIVE INOCULATION)

USHAKOV, V.G.; BARANOVSKAYA, S.A.; SOLOV'YEV, N.N.

Work at the Leningrad Pasteur Station during the period of war and blockade and outlook for possible activities of the Station in the postwar period. Trudy Len.inst. epid. i mikrobiol. 9:247-253 '47.

(MIRA 10:9)

(LENINGRAD--RABIES--PREVENTIVE INOCULATION)

USHAKOV, V.G., dokter tekhnicheskikh nauk

Bibliography of Russian works on metals (1917- ...) ... .
fort.spid. ... ., w:824-826 ...".   1: 9)
        (BIBLIOGRAPHY   1981...)

USHAKOV,V.G., kandidat tekhnicheskikh nauk

Selection of the rate of brine circulation in a freezing core.
Gidr.stroi.24 no.6:41-42 '55.   (MIRA 8:12)
(Soil freezing)

Translation from: Referativnyy zhurnal, Elektrotekhnika, 1957, Nr 9, p 34 (USSR)

SOV/112-57-9-18363

AUTHOR: Ushakov, V. G.

TITLE: Intensifying Heat Exchange in Steam-Turbine Oil Coolers
(Intensifikatsiya teploobmena v maslookhladitelyakh parovykh turbin)

PERIODICAL: Tr. Novocherkas. politekhn. in-ta, 1956, Nr 33/47, pp 102-106

ABSTRACT: To intensify heat exchange in tube-type oil coolers of steam turbines,
it is necessary to increase the heat transfer factor, which depends mainly on
the oil-tube transfer. The latter can be increased by a higher rate of oil flow.
A small remodeling of an oil system with weight-type centrifugal regulator and
with one high-pressure oil pump (the arrangement most frequently used in
Soviet steam-turbine plants) permits considerable increase in oil rate-of-flow
without increasing the energy necessary for oil pumping. Experiments staged
with oil coolers of various constructions have corroborated the possibility of
increasing the heat-transfer factor 2-3 times by increasing the oil rate-of-flow
up to 2 m/sec. The increased pressure difference is still practically acceptable
because a part of it can be shifted from the reduction valve over to the oil cooler.

Card 1/I

B. Ya. Z.

15-57-4-5437

AUTHOR: Ushakov, V. G.

TITLE: The Effect of Internal Heat Exchange in the Work of a Refrigerating Column (Vliyaniye vnutrennego teploobmena na rabotu zamorazhivayushchey)

PERIODICAL: Tr. Novocherkas. politekhn. in-ta, 1956, Nr 33/47, pp 107-114.

ABSTRACT: The author describes the freezing of soil by means of a refrigerating column. The heat transfer in the column is examined for short intervals of time during which the principal characteristics of the process may be considered constant. The investigation was confined to the conditions 1) that the soil along the entire length of the drill hole is uniform, and 2) that the heat is distributed only along planes perpendicular to the axis of the column; this assumption leads to the consequence

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· The Effect of Internal Heat Exchange in the Work (Cont.) 15-57-4-5437

, that the length of the column is very much greater than the thickness of the wall of ground ice which should form in artificial freezing of the ground by means of a refrigerating column. The effect of internal heat exchange is studied in relation to the heat discharge of the column and to the form of the ground wall. Calculations according to proposed formulas show that at a velocity for brine movement of 4 to 6 cm/sec the length of the column corresponding to the conditions of formation of a cylindrical ground-ice wall is 70 cm to 80 cm. With increased velocity this value grows very rapidly. The author notes that, because of the nonstationary process of ground freezing, the conditions of heat transfer change with time. To guarantee the formation of a cylindrical or conical ground-ice wall, the ratio of the coefficient of heat-transfer to the proposed formulas should be calculated for the worst conditions. i.e., for the maximum thickness of frozen soil.
Card 2/2

A. M. Ch.

AUTHORS: Dorofeyev, B.G., Lozanovskiy, A.L., Engineers and 110-58-5-3/25
. Meyerovich, Sh.S., Ushakov, V.G., Candidates of
Technical Sciences

TITLE: The Cooling of Tape-wound Starting Resistances Type KF
(Ob okhlazhdenii lentochnykh puskovykh soprotivleniy
tipa KF)

ABSTRACT: Resistance-alloy tape-wound resistances, type KF,
are used as starting resistances in electric locomotives, type
N8 and VL-23 and in motor coaches, trolley buses, etc. They
are cooled by free or forced-air circulation and are appreciably
lighter, smaller and cheaper than cast-iron resistances.
However, they are not widely used because inadquate information
is available about their thermal rating.
The Novocherkassk Polytechnical Institute and the laboratory
of the electric locomotive works made an experimental study
of the cooling of the resistances. They consist of assemblies
of standard resistance elements. An individual element,
illustrated in Figure 1, consists of resistance-alloy ribbon
wound on edge to form a coil which is insulated from its
Card1/5 channel-shaped supporting bar by 2 segmental porcelain insulators.

110-58-5-3/25

The Cooling of Tape-wound Starting Resistances, Type KF

The rate of air flow and the aspect of the element in relation
to the flow have an important bearing on the rating. It is
known from operating experience that the highest local tempera-
ture should not exceed 450 ^{0}C, or else the porcelain insulators
crack. It was required to find the relationship between the
permissible loading and the air speed.
Thermocouples were used to determine the temperature of the
element at different places. The air speed ranged from
0 - 18 m/sec. The current was so chosen that the highest local
temperature did not exceed 350 ^{0}C. In one arrangement, the
porcelain insulators were arranged head-on to the air stream,
as shown in Fig. 3a, which is the usual arrangement. The
arrangement of 3b, in which the insulators are edge-on across
the stream, was also tested. In both cases, the outer edges
of the resistance elements were found to be better cooled than
the inner. Thus, the conditions of cooling are not greatly
changed when the element is turned through 90^0. Also, under a
wide range of conditions, the maximum temperature is on the
leeward side of the coils. For example, with an air flow of
15 m/sec and a current of 142 A, the temperature of the leeward
Card2/5parts of the spiral was 382 ^{0}C, the top and bottom were at

The Cooling of Tape-wound   Starting Resistances, Type KF

142 $^{\circ}$C and the windward side 90 $^{\circ}$C.   Holes were than made in
the supporting bars to reduce the temperature of the leeward
side of the coils.   The holes occupied 20% of the area of
each bar.   With this arrangement .the cooling was much more
uniform and the current rating could be increased.   The
relationship between the rate of air flow and the permissible
current in the element, in the two alternative positionings
described above, are shown in Figure 4.
Tests were next made on a complete starting-resistance
assembly consisting of four rows of seven elements each.
Measurements were made of air flow, coil temperatures and
power.   Once again, the middle of the elements was hottest.
The temperature difference between the windward and leeward
parts of a coil was 100 $^{\circ}$C.   The third row of elements was
the hottest, and showed the highest temperature on its lee-
ward side but the porcelain insulators did not get too hot.
A graph of the relationship between the permissible current
and the rate of air flow for a maximum temperature of 350 $^{\circ}$C
is given in Figure 5.   In addition to the usual assembly with
the elements arranged one behind the other, a staggered
Card3/5 honeycomb arrangement was tried, the size of the box and

The Cooling of Tape-wound Starting Resistances, Type KF

the number of elements being unchanged. Again holes were
drilled in the bars. The performance graphs plotted in
Fig.5 show that the rating is higher with the honeycomb
than with the usual square arrangement. With an air flow of
45 m^3/min, the permissible current for the standard box is
46.75 A but in the modified assembly it was 51.9 A. This
applies only with forced cooling; with natural ventilation
the honeycomb arrangement is not so good.
A number of tests were also made under conditions of transient
loading to determine the time different loads take to
produce a temperature of 350 ^{o}C.   The honeycomb arrangement
was used and the results given in Figure 6, show that the
resistances take about an hour to reach a steady temperature
with the normal rated current, although cast-iron elements
take still longer. Starting from cold, the resistances can
carry up to three times rated current for 5 minutes. Under
transient conditions, the rate of forced ventilation is
important only for light currents. With currents of the
order of 60 A and air-flow rates up to 20 m^3/min, the
permissible time of operation is 4 – 6 min and is practically
independent of the rate of air flow.

Card4/5

The Cooling of Tape-wound   Starting Resistances, Type KF   110-58-5-3/25

There are 6 figures.

ASSOCIATIONS: Novocherkasskiy politekhnicheskiy institut
(Novocherkassk Polytechnical Institute) and
Novocherkasskiy elektrovozostroitel'nyy zavod
(Novocherkassk Electric Locomotive Works)

SUBMITTED: June 24, 1957

Card 5/5

S/081/60/000/018/003/009
A006/A001

11.9200

AUTHOR: Ushakov, V. G.

TITLE: Heat Exchange in Field's (Fil'd) Tubes at a Constant Temperature of the External Heat Carrier

TEXT: An analytical investigation was made of heat exchange in Field's tubes when introducing a liquid through the internal tube or through an annular duct at a constant temperature of the external heat carrier. It was established that the method of introducing the liquid did not affect the heat efficiency of the Field tube. The internal heat exchange in the Field tube causes an increase in the heat exchanger dimensions. This is connected with a decrease in the mean difference of the heat carrier temperatures. The degree of increase in the Field tube dimensions is determined by the Z/Z_{limit} ratio where $Z = K_1/K_2$, $Z_{limit} = (A^2 - 1)/4$; $A = 2\left[m - 0.5(t_1 + t_2)\right]/(t_2 - t_1)$; K_1, K_2 are the coefficients of heat transfer for the internal and external tubes; t_1, t_2 are the temperatures of the heat carrier at the inlet and outlet of the Field tube. The internal

Card 1/2

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S/051/60/000/018/003/009
A006/A001

Heat Exchange in Field's (Fil'd) Tubes at a Constant Temperature of the External
Heat Carrier

heat exchange affects considerably the distribution of the heat flux along the
Field tube; by varying Z and the spot of the liquid inlet, a considerable
increase or decrease of the heat flux can be assured along the Field tube,
approaching a distribution corresponding to optimum conditions of heat exchange.

Yu. Petrovskiy

Translator's note: This is the full translation of the original Russian abstract.

Card 2/2

USHAKOV, V.G.

Heat exchange in Field's tubes in cases of internal heat
sources. Trudy NPI 106:33-36 :60.   (MIRA 15:5)
     (Heat—Transmission)   (Chemical reactors)

USHAKOV, Viktor Ivanovich

N/S
773
.U?

Kreditovaniye Torgovykh Organizatsiy (The Financing of Commercial Organi-
zations) Moskva, Gosfinizdat, 1956.
62 P. Tables.

USHAKOV, V.I.

Structural and system isomorphisms of nonperiodic locally nilpo-
tent groups. Izv.vys.uchsh.zav.; mat. no.1:223-226 '57.
(MIRA 12:10)

1. Moskovskiy gosudarstvennyy universitet im. M.V.Lomonosova.
(Groups, Theory of)

PHASE I BOOK ... ICH   SOV/3556

Moscow. Inzhenerno-fizicheskiy institut

Nekotoryye voprosy eksperimental'noy fiziki; [sbornik] vyp. 2 (Some Problems in Experimental Physics; Collection of Articles. Nr. 2) Moscow, Atomizdat, 1959. 123 p. 3,200 copies printed.

Sponsoring Agency: RSFSR. Ministerstvo vysshego i srednego spetsial'nogo obrazovaniya.

Ed.: B.M. Stepanov, Doctor of Physical and Mathematical Sciences, Professor; Tech. Ed.: S.M. Popova.

PURPOSE: This collection of articles is intended for graduate engineers and physicists engaged in the design of physics (laboratory) apparatus, and automatic and telemechanic equipment.

COVERAGE: This collection of articles on experimental physics was written by members of the Moscow Physics and Engineering Institute. Each article is accompanied by drawings and references.

USHAKOV, V.I.

R-radical groups. Izv. vys. ucheb. zav. mat. no. 6:233-238
'60.   (MIRA 14:1)

1. Moskovskiy gosudarstvennyy universitet im. M.V. Lomonosova.
                    (Groups, Theory of)

VOL'FSON, I.M., inzh.; NAUMOV, M.K., inzh.; USHAKOV, V.I., inzh.

Remote controlled coordination device for static blowing through profiles of blades. [Trudy] LMZ no.6:464-470 '60.   (MIRA 13:12)
(Turbines—Aerodynamics)
(Electric instruments)

AUTHORS: Vol'fson, I. M.; Nausov, M. K., and Ushakov, V. I.

TITLE: Remote-controlled coordinator for the static blowing through of the blade profiles

PERIODICAL: Referativnyy zhurnal, Mashinostroyeniye, no. 10, 1961, 17, abstract 10I134 (V sb.: Issled. elementov parovykh i gaz. turbin i osevykh kompressorov. [Tr. Leningr. metallich. z-da, 6]. Moscow-Leningrad, Mashgiz, 1960, 464-470)

TEXT: The authors describe the coordinator, its mechanical part, the control panel and electric circuit. Service tests showed the necessary control accuracy of the displacements of the devices during the tests (linear displacements $\pm$ 0.1 mm, rotary movements $\pm$ 0.1°). The system makes it possible to improve the working conditions of the laboratory staff and increase the quality of tests. There are 4 figures.

[Abstractor's note: Complete translation]

Card 1/1

KISELEV, V.I., prof., doktor tekhn. nauk; NIKULIN, V.B., kand. tekhn. nauk; USHAKOV, V.I., inzh.

Removal of water in pneumatic mine networks under permafrost conditions. Gor. zhur. no.7:48-50 Jl '63.   (MIRA 16:8)

1. Moskovskiy institut stali i splavov.

S/058/61/000/010/024/100
A001/A101

AUTHORS: Dolgoshein, B.A., Luchkov, B.I., Ushakov, V.I., Asatiani, T.L.,
             Krishchan, V., Matevosyan, Ye., Sharkhatunyan, R.

TITLE: On polarization of μ-mesons of cosmic radiation

PERIODICAL: Referativnyy zhurnal. Fizika, no. 10, 1961, 97-98, abstract 10B516
             ("Tr. Mezhdunar. konferentsii po kosmich. lucham, 1959, v. 1", Mos-
             cow, AN SSSR, 1960, 319 - 321)

TEXT: Polarization of μ-mesons was determined from asymmetry of angular
distribution of positrons at stops and decays of μ-mesons in copper. The μ-
mesons with momenta of 0.35; 1.05; 1.5, and 2.0 Bev/c were measured. The res-
pective values of polarization are as follows; 0.21±0.08; 0.35±0.087; 0.52±
±0.083 and 0.50±0.09. The relation obtained between the polarization degree of
μ-mesons and their momenta is briefly discussed.

                                                            L. Dorman

[Abstracter's note: Complete translation]

Card 1/1

USHAKOV, V. I., ASATIANI, T. L., BEREZINSKIY, L. S., DOLGOSHEIN, B. A.,

LUCHKOV, B. I., KRISHCHYAN, V. M., MATEVESYAN, YE. M., SHARKHATUNYAN, R. O.

Alikhanyan, A. I., Asatani, T. L.

"Polarization of Cosmic Ray Muons."

report submitted for the Intl. Conf. on Cosmic Rays and Earth Storm (IUPAP) Kyoto, Japan 4-15 Sept. 1961.

S/823/62/000/000/004/007
B125/B102

AUTHORS: Dolgoshein, B. A., Luchkov, B. I., Ushakov, V. I.

TITLE: Study of the polarization of positive muons in cosmic rays

SOURCE: Nekotoryye voprosy fiziki elementarnykh chastits i atomnogo yadra. Ed. by V. D. Mikhaylov and I. L. Rozental'. Mosk. inzh.- fiz. inst. Moscow, Gosatomizdat, 1962, 83-90

TEXT: The polarization of a current of high-energy muons was studied with a view to elucidating how they are produced in the upper atmosphere. Their degree of polarization is most conveniently determined by measuring the angular distribution of decay positrons from a muon stopped inside a cylindrical target. The experimental arrangement is shown in Fig. 1. 7798 $\mu \to e^{+}$ decays were recorded within 5200 hrs at muon energies of 0.3, 1.05, and 1.55 Bev, and for each case the positron angular distributions were measured. Using the method of least squares, the quantity $b\eta$ in the equation $f(\theta) \sim 1 - b\eta \cos\theta$ (θ = projection of the angle between positron direction and muon direction onto the perpendicular plane) is calculated from these angular distributions. The factor b depends on the parameters of

Card 1/3

Study of the polarization of...

S/823/62/000/000/004/007
B125/B102

the experimental arrangement and on the characteristics of the $\mu^+ \to e^+$ decay (positron spectrum, range-to-energy ratio of the positrons). At the instant of muon production, their polarization is given by $\eta^* = \eta/K_{atm} K_{stop}$, where η is the degree of polarization, and $K_{atm} \sim 0.95$ is the coefficient of depolarization in the atmosphere; the coefficient K_{stop} allows for the possible depolarization of the muon after stopping. Accelerator experiments indicated that $K_{stop} = 1$. For 0.3 bev, $\eta^* = 0.30 \pm 0.06$ and $\eta' = 0.24$; for 1.05 Bev, $\eta^* = 0.40 \pm 0.08$ and $\eta' = 0.33$; for 1.55 Bev, $\eta^* = 0.40 \pm 0.05$ and $\eta' = 0.335$. η' is the degree of polarization to be expected from data of V. Berezinskiy and B. A. Delgoshein (Zh. eksperim. i teor. fiz. 71, 42, 1084 (1962)). The difference between η^* and η' is obviously due to the effect of $K \to \mu$ decay on the production of muons at increasing energy. The resulting degree of polarization may be considerably affected even by very small amounts of muons produced in $K \to \mu$ events. The great significance of measuring the polarization of cosmic-ray muons at even higher energies is stressed. There are 4 figures and 1 table.

Card 2/3

S/120/62/000/001/018/061
E140/E463

AUTHORS: Dolgoshein, B.A., Luchkov, B.I., Ushakov, V.I.

TITLE: Pulse hodoscope for muon decay investigations

PERIODICAL: Pribory i tekhnika eksperimenta, no.1, 1962, 85-89

TEXT: The instrument described here is intended for the study of
the polarization of cosmic μ^+ mesons, by recording the particle
trajectories in $\mu \rightarrow e$ decay.   The method is to determine the
ratio of decay positrons emerging from an absorber in the forward
and backward hemispheres.   Gas counters are used with pulsed
overvoltage.   This permits defining the times at which neon-
triode indicator tubes operate in the cycle of events associated
with the decay.   The arrangement is best illustrated with
reference to Fig.1.   Here rows A_1, A_2 and A_3 consist of
argon-methylal counters specially produced in the laboratory
(diameter 2 cm, length of sensitive volume 60 cm), the remaining
rows consisting of standard Soviet geiger counters type $C И-6 Г$
(SI-6G).   Row Π is the absorber, dimensions $70 \times 140 \times 2$ cm^3.
Blocks B and C are intended for positron trajectory
measurements, and are as symmetrical as possible.   In addition,
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Pulse hodoscope for muon decay ...

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E140/E463

they are attached to a mechanism permitting their rapid interchange
(every two hours).   The dc excitation of the counters in the
hodoscopic rows A_1, A_2, A_3 and the B, C blocks was selected to
enable an arc discharge to arise after passage of an ionizing
particle by application of very short (~ 0.1 µs) pulse over-
voltages, with an efficiency of $\sim 100\%$.   By terminating the
pulse excitation of the hodoscope tubes before applying that of
the positron detection blocks B, C, the hodoscope tubes are not
permitted to register the passage of positrons occurring during the
time that B and C are excited.   The pulse excitation of the
hodoscope rows is triggered by a muon passage, while the positron
blocks are triggered from 0.8 to 5.8 µs later.   Rows S_1, S_2, S_3
are control rows, used for detecting the arrest of a muon in the
absorber.   The relationship between the dc and pulse excitation
voltages in B, C, is such that the efficiency for charged
particles passing through the counters during the pulse excitation
is close to 100%, while very low ($\leqslant 10^{-7}$) for the passage of the
muon which triggers the pulse supply.   A block diagram and the
counter-indicator circuits are given and discussed in some detail.
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Pulse hodoscope for muon decay ...

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An example of the records obtained is given. The photograph (Fig.3) indicates the arrival of a μ^+, its absorption in Fe, and the emission of a positron during the interval 1.7 to 2.2 μs. A time analyser associated with the hodoscopic instrument permits the muon lifetime to be determined, acting as a control on the hodoscope, and permits possible depolarization during the 5 μs after arrest, giving the dependence of polarization on time. A series of control measurements was made to determine the asymmetry of the instrument with respect to the absorber. Iron was used to obtain full depolarization. Using 30 μs delay, or operating without an absorber, the background (false $\mu \longrightarrow e$ decay) was measured and found to be about 5×10^{-3}. The muon lifetime was found to be 2.19 ± 0.04 μs, from measurements on the instrument. There are 3 figures.

ASSOCIATION: Fizicheskiy institut AN SSSR
(Physics Institute AS USSR)

SUBMITTED: April 18, 1961

Card 3/5

S/048/62/026/006/002/020
B125/B112

AUTHORS: Dolgoshein, B. A., Luchkov, B. I., and Ushakov, V. I.

TITLE: Polarization of cosmic muons of different energies

PERIODICAL: Akademiya nauk SSSR. Izvestiya. Seriya fizicheskaya, v. 26,
             no. 6, 1962, 711 - 712

TEXT: Polarization measurement in the energy range 0.2 - 1.55 Bev is
studied. A preliminary report has already been given at the
Mezhdunarodnaya konferentsiya po kosmicheskim lucham (International Con-
ference on Cosmic Rays) Moscow, 1959. The degree of polarization was
determined from the decay asymmetry when a muon was slowed down in a
copper target surrounded by an array of Geiger counters (in rectangular
or cylindrical arrangement). The background is practically eliminated by
photographic fixing of the muon and positron trajectories for each single
$\mu^+ \to e^+$ -decay. In this way cases can easily be identified. Measurement
of the decay positrons with the rectangular experimental arrangement
permits an additional control and confirms that the muon is not de-
polarized after slowing down in the target. The check measurements on an

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Polarization of cosmic muons...

iron target confirm the symmetry of the rectangular experimental arrange-
ment. At sea level, photographic pictures of approximately 40,000
$\mu \to$ e-decay events were taken at muon energies 0.2; 0.3; 0.55; 1.05; 1.4
and 1.55 Bev. From these data the degree of polarization was calculated
with the aid of the "Ural" computer. If the muon energy increases from
(0.2 ÷ 0.5) to (1.4 ÷ 1.55) Bev, polarization increases (1.5 ± 0.19) times
and approximately agrees with the theoretical values of V. Berezinskiy,
B. Dolgoshein, Zh. eksperim. i teor. fiz., 42, 949 (1962). There are
1 figure and 1 table. The most important English-language reference is:
G. Clark, J. Hersil, Phys. Rev., 108, 1938 (1957).

Card 2/2

USHAKOV, V.I. (Moskva)

Classes of conjugate elements in topological groups.
Ukr. mat. zhur. 14 no.4:366-371 '62.   (MIRA 15:12)
(Groups, Theory of)
(Topology)

USHAKOV, V.I.

Concerning a certain class of topological groups. Dokl.AN SSSR
144 no.1:65-68 My '62.   (MIRA 15:5)

1. Predstavleno akademikom P.S.Aleksandrovym.
          (Groups, Theory of)   (Topology)

USHAKOV, V.I.

Topological groups close to bicompact groups. Sib. mat. zhur. 4
no.3:689-694 My-Je '63. (MIRA 16:6)
(Topology) (Groups, Theory of)

USHAKOV, V.I.

Topological FC-groups. Sib. mat. zhur. 4 no.5:1162-1174 S-O
'63. (MIRA 16:12)

USHAKOV, V.I.

Topological groups with a normalizing condition for closed
subgroups. Izv. AN SSSR. Ser. mat.   . 27 no.4:943-948
Jl-Ag '63.   (MIRA 16:8)

    (Algebraic topology)   (Groups, Theory of)

USHAKOV, V.I. (Moskva)

Topological groups with bicompact classes of conjugate subgroups.
Mat.sbor. 63 no. 2:277-283 F '64.   (MIRA 17:5)

USHAKOV, V.I.

Groups with a normalizer condition for closed subgroups. Izv. AN SSSR.
Ser. mat. 29 no.5:1055-1068 '65.   (MIRA 18:10)

DOLGOSHEIN, B.A.; LUCHKOV, B.I.; USHAKOV, V.I.

Operation of gas-discharge counters at large pulse over-
voltages. Nauk.vop.eksp.fiz. no.2:32-39 '59.
(MIRA 13:2)

(Nuclear counters)

69074

S/120/60/000/01/009/051

21.5300

E192/E382

AUTHORS: Dolgoshein, B.A., Luchkov, B.I. and Ushakov, V.I.

TITLE: Operation of Gas-discharge Counters at Large Pulsed
            Overvoltages

PERIODICAL: Pribory i tekhnika eksperimenta, 1960, Nr 1,
            pp 39 - 42 (USSR)

ABSTRACT: The experimental equipment used in the investigation
            described was as follows: a set of two G-M counters
            connected to a coincidence circuit were used to register
            cosmic particles. The resulting coincidence pulse
            operated a generator producing a supply pulse having a
            duration of $0.3 - 4.5$ µs and an amplitude up to 3 kV.
            The supply pulse was applied to the investigated counter
            which was situated between the two "coincidence"
            counters. The pulse generator was based on the circuit
            described in Ref 1 and also on a hydrogen-thyratron
            furnished with a forming line. The delay between the
            supply pulse and the instant of appearance of a particle
            could be varied from 0.7 to 50 µs. The load of the
            counter was 30 kΩ. When the pulse duration was 0.3 µs,
Card1/4   the pulse was triangular and had a rise time of 0.1 µs

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S/120/60/000/01/009/051
E192/E382

Operation of Gas-discharge Counters at Large Pulsed Overvoltages

and a decay of 0.2 μs. At longer durations the shape
of the pulse could be regarded as being rectangular, its
rise time being 0.1 μs. The above equipment was used
to investigate the properties of the counters, types MS-9,
GS-9 and GS-30. Figure 1 shows the amplitude characteristics
of the counters, type MS-9 and the relative number of
spurious discharges for a constant supply voltage which
was 100 V higher than the Geiger threshold. Curve 1 in
the figure represents the amplitude characteristic,
while Curves 2 show the number of spurious discharges.
It was found that the amplitude characteristics of the
counters, types GS-9 and GS-30, are very similar to those
of Figure 1, provided the test conditions are identical.
The efficiency of a counter depends substantially on the
delay of the supply pulse with respect to the appearance
of the particle. The time during which the counter
"remembers" the passage of a particle depends on the
number of charges produced in the volume of the
counter and the rate of their extraction. This effect

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Operation of Gas-discharge Counters at Large Pulsed Overvoltages

is illustrated, for the counter type MS-9, in Figure 2.
From this it is seen that the "memory" of the counter is
about 5-6 μs. The efficiency as a function of the supply
voltage is plotted in Figure 3. From this it is seen
that at a fixed delay time (6 μs) the efficiency curve has
a minimum. This can be explained as follows: The time
determining the "memory" of the counter in the Geiger
region consists of two components: the time necessary
for the propagation of the charge along the wire and the
time during which the positive ions recede from the wire
sufficiently far for the probability of the ionisation by
ions to be sufficiently small. Figure 4 shows the time
characteristics of the counters MS-9 when the particles
were passing through the middle of the counter (Curves 1
and 3) and through the end of the counter (Curves 2 and 4).
It is seen that the "memory" times for the two cases are
different. This permits evaluation of the velocity of the
propagation of the discharge in the counter. It is found
that the velocity is 2 cm/μs. The time characteristics for
Card3/4   the counters type GS-30 are shown in Figure 5. From this,

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Operation of Gas-discharge Counters at Large Pulsed Overvoltages

it is seen that the "memory" time for the counters is 3-4 μs. The time characteristics of the GS-9 counters are similar to those of Figure 5. The counters type MS-9 were also investigated at low DC voltages. The meaning of the term "low" signifies that the counters operated in the absence of gas-type amplification. The time characteristics for the counter taken with the pulse voltage of 1.9 kV are given in Figure 6. The authors make acknowledgment to A.A. Tyapkin and V.V. Vishnyakov for valuable advice. There are 6 figures and 2 Soviet references.

SUBMITTED: January 14, 1959

Card 4/4

USHAKOV, V.I.

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S/120/62/000/001/009/061
E032/E514

AUTHORS: Borisov, A.A., Dolgoshein, B.A., Luchkov, B.I.,
             Reshetin, L.V. and Ushakov, V.I.

TITLE: A study of spark-chamber characteristics

PERIODICAL: Pribory i tekhnika eksperimenta, no.1, 1962, 49-54

TEXT: The authors report the construction and the main
characteristics of an experimental argon-filled spark chamber
with a working volume of 0.5 litres. The spark chamber consists
of four plane-parallel electrodes ($150 \times 70 \times 5$ mm^3) separated by
cylindrical teflon insulators. Gap lengths of 8, 10, 12 and
30 mm have been used (in the latter case there is only one gap).
The chamber is filled with technical argon mixed with a small
amount of ethyl alcohol to reduce spurious discharges. The
chamber is gated by two arrays of Geiger counters, one above and
one below the chamber. The coincidence pulse from these two
arrays triggers a high-voltage pulse generator based on the
hydrogen thyratron ТГИ-1 (TGI-1) 325/16. The pulse produced
by the generator has a rise time of about 30 nanosec and a decay
constant of 10^{-7} sec; the amplitude is approximately equal to the
Card 1/2

A study of spark-chamber ...   S/120/62/000/001/009/061
                                      E032/E514

maximum anode voltage on the thyratron.   The delay between the
passage of the nuclear particle and the application of the high-
voltage pulse to the electrodes is about 0.7 µsec, most of which
is associated with the operation of the hydrogen thyratron.   A
clearing field of up to 100 V/cm is applied to the plates.   Fig.3
shows the dependence of the efficiency of the chamber on the
amplitude of the high-voltage pulse for various gas pressures
(zero clearing field, high-voltage pulse delay 0.7 µsec, inter-
electrode gap 10 mm).   Data are also reported on the dependence
of the efficiency on the high-voltage decay time, the amplitude
and polarity of the clearing field and the high-voltage delay
time.   It is reported that particle tracks at angles up to 35°
with the normal to the plates can be reliably recorded.   There
are 6 figures.

ASSOCIATION: Fizicheskiy institut AN SSSR
               (Physics Institute AS USSR)

SUBMITTED: February 16, 1961

Card 2/3

S/0120/64/000/002/0104/0107

ACCESSION NR: AP4033121

AUTHOR: Burgov, N. A.; Kiselev, Yu. T.; Ushakov, V. I.

TITLE: High-voltage impulse generators for spark chambers

SOURCE: Pribory* i tekhnika eksperimenta, no. 2, 1964, 104-107

TOPIC TAGS: spark chamber, high voltage impulse generator, surge generator, gas discharge chamber

ABSTRACT: Thyratron h-v impulse generators used for supplying spark or gas-discharge high-capacitance (5-8 nanof) chambers are briefly described. To obtain the spark-chamber resolving time of 500 nsec, a generator with overheated TG 1-400/16 thyratrons was tested. The thyratron firing delay was 110 nsec, and the h-v pulse rise time was under 15 nsec. The overheated thyratrons withstood: 4×10^5 operations without impairment of the firing-delay or pulse-rise time. The firing delay was slightly higher with TG 1-700/25 thyratrons. The quickest

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ACCESSION NR: AP4033121

impulse-generator operation was obtained with vacuum-spark VIR-5 relays used as generator switches. With these relays, the generator had a total delay of 160 nsec or less. Another generator, with TG1-50/5 thyratrons, exhibited a total delay of 220 nsec. "The authors are thankful to L. S. Eyg and V. S. Kaftanov for their useful advice and recommendation to use the vacuum spark relay." Orig. art. has: 3 figures and 1 table.

ASSOCIATION: none

SUBMITTED: 13May63   DATE ACQ: 11May64   ENCL: 00

SUB CODE: NS   NO REF SOV: 002   OTHER: 001

Card 2/2

ACCESSION NR: AP4033140   S/0120/64/000/002/0163/0164

AUTHOR: Kiselev, Yu. T.; Ushakov, V. I.

TITLE: Glued spark chambers

SOURCE: Pribory* i tekhnika eksperimenta, vol. 9 no. 2, 1964, 163-164

TOPIC TAGS: spark chamber, glued spark chamber, epoxy glued spark chamber

ABSTRACT: Of carbonyl-type, L4, ED-5 epoxy, and ED-6 epoxy adhesives, the plasticized epoxy resin proved best for gluing parts of multisection spark chambers together. These chamber sections were made: 20 x 20 cm with inter-electrode spacings of 0.3 and 1 cm; sections of a 51 x 51 x 0.6-cm chamber; sections with conducting-glass 20 x 20 x 1-cm electrodes. The chambers were controlled by a scintillation-counter "telescope" which recorded charged cosmic particles. H-v 3-18-k, 0.2-microsec pulses and a constant clearing voltage of 0 ± 300 v were used. "In conclusion, the authors wish to thank A. Lazarev and

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ACCESSION NR: AP4033140

L. Bernshteyn for their help in carrying out measurements." Orig. art. has:
2 figures.

ASSOCIATION: none

SUBMITTED: 08May63   DATE ACQ: 11May64   ENCL: 00

SUB CODE: NP   NO REF SOV: 002   OTHER: 000

Card 2/2

USHAKOV, V.I.

Call Nr: TS 213.Z45

AUTHOR: Zhetvin, N.P., Rakhovskaya, F.S., Ushakov, V.I.

TITLE: Descaling of Metals (Udaleniye okaliny s poverkhnosti
               metala) Methods Employed by the "Serp i Molot" Plant
               (Opyt zavoda "Serp i Molot")

PUB. DATA: Gosudarstvenhoye nauchno-tekhnicheskoye izdatel'stvo
               literatury po chernoy i tsvetnoy metallurgii,
               Moscow, 1957, 108 p., 4,000 copies

ORIG. AGENCY: None given

EDITOR: Ed.: Gamov, M.I.; Ed. of the Publishing House:
               Berlin, Ye.N.; Tech. Ed.: Attonovich, M.K.

PURPOSE: This is a manual for engineers and foremen engaged
               in metallurgical and machine-building plants.

COVERAGE: This book contains a description of the most advanced
               methods of descaling by acid and alkaline pickling, as
               well as of the electrolytic and the hydride method.

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Descaling of Metals   (Cont.)   Call Nr: TS 213.Z45

The authors believe that the methods of pickling   stainless
austenitic Ni-Cr steels, semiferritic and ferritic high-
chrome steels, and also of nickel and titanium alloys have as yet
been insufficiently investigated and present many problems.
They state that this book is an attempt to classify experi-
ments in pickling and to show new approaches to this problem.
Disadvantages and limitations of the acid pickling method
are discussed. Experiments with sodium hydride methods are
described. Methods of neutralizing and recovery of spent
pickling solutions are also mentioned. There are numerous
diagrams, tables, and chemical data. There are 29 references;
of which 15 are Soviet, and 14 English.

TABLE OF CONTENTS:

Descaling of Metals   (Cont.)   Call Nr: TS 213.Z45

AVAILABLE: Library of Congress
Card 3/3

USHAKOV, V.I.

SOV/130-58-7-35/35

AUTHOR: Slavkin, v.S.

TITLE: "Removing Scale from the Surface of Metal" (Udaleniye okaliny s poverkhnosti metalla) New Book by N.P. Zhetvin, F.S. Rakhovskaya and v.I. Ushakov. Published in 1957 by Metallurgizdat.

PERIODICAL: Metallurg, 1958, nr 7, p 48 (USSR).

ABSTRACT: This is a review, on the whole favourable, of the above book.

Card 1/1   1. Metals--Scale

USCOMM-DC-55404

S/133/62/000/006/012/015
A054/A127

AUTHORS: Zhetvin, N. P., Candidate of Technical Sciences, Rakhovskaya, F. S.,
           Ushakov, V. I., Engineers

TITLE: Continuous electrolytic pickling of carbon steel and stainless steel
           strip and wire

PERIODICAL: Stal', no. 6, 1962, 553 - 555

TEXT: At the "Serp i Molot" Plant on a special pilot installation the con-
tactless electrolytic pickling of wires and strips was studied. 0X18H9 (0Kh18N9),
1X18H9T (1Kh18N9T), 1X18H11M (1Kh18N11M), ЭИ 991 (EI991), ЭИ 349 (EI349)
steel grades, moreover a nickel alloy, containing 0.06% C, 0.35% Mn, 0.65% Si,
0.007% S, 21% Cr, 2.5% Ti, 0.05% Cu, 0.9% Fe, 0.65% Al, 0.01% B, 0.01% Zr were
tested. The wires made of the above grades were pickled on continuously operating
equipment. The first, alkaline bath (at a temperature of 450 - 480°C) contained
100-% NaOH, in the acidic bath (at room temperature or 60 - 80°C) the following
compositions were tested: A: 3% H₂SO₄ + 1% HNO₃; B: 10% H₂SO₄ + 3% NaCl;
C: 3.25% H₂SO₄ + 5% Na₃PO₄. In the alkaline bath 1Kh8N9T steel sheets were ap-

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S/133/62/000/006/012/015
A054/A127

Continuous electrolytic pickling of...

plied instead of lead ones.. The pickling of a 1.6-mm diameter 1Kh18N9T steel wire at current densities of 34 - 42 a/dm^2 for 12 seconds yielded the optimum result, a bright, clean surface. When applying the possible maximum current density for the given conditions (42 a/dm^2) a satisfactory surface was obtained in 9.6 seconds. Electrolyte C) gave results similar to A); electrolyte B) was unsatisfactory. Increasing the current density above 40 a/dm^2 did not accelerate the process: the required time could not be shortened under 12 seconds. The alkaline solution and electrolytes A) and C) can also be applied in pickling carbon steel wire. In that case, at a current density of 15 - 18 a/dm^2 the output of the process increases by a factor of 1.6 - 1.7 as compared with the continuous chemical process. The industrial-scale tests were carried out by setting 90-mm wide baths of 1Kh18N9T steel in the conventional thermal pickling equipment, filled with the following solutions:

Alkaline bath: 65% NaOH + 30% NaNO$_3$ + 5% NaCl   at 460 - 470°C
Acidic bath: 18% H$_2$SO$_4$ + 1% NaCl + 5% NaNO$_3$ at 80 - 85°C
Bleaching bath: 8% HNO$_3$ at room temperature

In pickling 3.6 mm diameter 0Kh18N9T and Kh18N11M steel wires, a clean, bright and scale-free surface was obtained at a rate of 10.5 m/min, (20 sec. in the al-

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Continuous electrolytic pickling of...

kaline, 29 sec. in the acidic and 11 sec. in the bleaching bath). In the simul-
taneous pickling of 24 wires, at a rate of 20 ton/day, a generator power of
140 kw (51 v, 2,750 a) is required. In pickling stainless steel strips, (0.5 mm
thick, 40 mm wide) in the pilot installation, the cathode and anode plates (0.6
mm long in the alkaline bath and 1 m long in the acidic bath) were set parallel
to the movement of the strip. On account of the larger surface of the strip, the
maximum current density was lowered to 12 - 15 a/dm^2. The strips tested were made
of 1Kh18N9T, 1Kh18N9, ЭИ 432 (EI432), ЭИ 435 (EI435), X 13 H 4 Г 9 (Kh13N4G9) and
1X 13 (1Kh13) steel grades. In the alkaline bath 100-% NaOH (at 450°C), in the
acidic bath solutions A) and C) (at 70°C) were tested. A satisfactory surface
was obtained with these solutions, when keeping the strip 6 - 9 seconds in the
alkaline bath and 9 - 15 seconds in the acidic one. As in currentless continuous
chemical pickling - under industrial conditions - the pickling of the same strip
requires 82 seconds, the electrolytic method increases the output of the process
3 - 4 times. For pickling strips 0.5 mm thick and 400 mm wide at a current den-
sity of 15 a/dm^2 and with electrode plates 7 m long, the generator power required
will be 1,260 kw (150 v, 8,400 a). There is 1 figure.

ASSOCIATION: Zavod "Serp i molot" ("Serp i molot" Plant)

Card 3/3

L 42276-65   EPF(n)-2/EWP(z)/EWT(m)/EWP(b)/EWA(d)/EWP(t)   Pu-4   IJP(c)   JD/JG
AM5009839   BOOK EXPLOITATION   S/

Zhetvin, Nikita Petrovich; Rakhovskaya, Faina Samoylovna; Ushakov, Viktor
Ivanovich

Removing scale from a metal surface (Udaleniye okaliny s poverkhnosti metalla)
2d ed., rev. and enl. Moscow, Izd-vo Metallurgiya, 1964. 194 p. illus.,
biblio. Errata slip inserted. 3090 copies printed. Editor of the publishing
house: Yo. N. Berlin; Technical editor: R. Ya. Ginzburg

TOPIC TAGS: etching, scale removal, pickling, steel, titanium alloy, molybdenum
alloy, corrosion cracking

PURPOSE AND COVERAGE: This book was intended for engineers and may be used also
by foremen at metallurgical and machine-building plants. The experience of the
"Serp i Molot" plant in etching carbon, stainless, and high-temperature steels and
certain alloys (shapes, sheet, strip, and wire) is described. Information is pre-
sented concerning the most modern methods of acid, alkali, hydride, and electroly-
tic etching. This edition covers additional experimental work done at the plant
from 1957 through 1962. The authors express their gratitude to V. G. Ledkov.

Card 1/2

L 42276-65
AM5009839

TABLE OF CONTENTS:

SUB CODE: MM   SUBMITTED: 17Feb64   NR REF SOV:035

OTHER:028

CC
Card 2/2

USHAKOV, V.I., inzh.

Results of investigating the discharging of water in underground
pneumatic systems in mines under permafrost conditions. Izv.
vys. ucheb. zav.; gor. zhur. 7 no.5:110-114 '64.   (MIRA 17:12)

1. Moskovskiy institut stali i splavov. Rekomendovana kafedroy
mekhanizatsii gornykh rabot.

USHAKOV, V.I.

Topological locally nilpotent groups. Sib. mat. zhur. 6 no.3:581-595
                                                      (MIRA 18:8)
My-Je '65.

USHAKOV, V.I., inzh.; DUBROVINA, N.K., inzh.

Concerning A.I. Karabin's article "Is a terminal compressor cooler necessary?" Prom. energ. 19 no.12:29-32 D '64.
(MIRA 18:3)

1. Moskovskiy geologorazvedochnyy institut imeni Ordzhonikidze (for Ushakov). 2. Permskiy neftepererabatyvayushchiy institut (for Dubrovina).

L 03837-67   EWT(1)   SCTB   DD/GD

ACC NR: AT6036683   SOURCE CODE: UR/0000/66/000/000/0384/0385

AUTHOR: Chesalin, L. S; Dmitriyev, N. Ye.; Gorbov, F. D.; Novikov, M. A.;
Ushakov, V. I.

ORG: none

TITLE: A device for studying interdependent group activity (two to eight operators)
/Paper presented at the Conference on Problems of Space Medicine held in Moscow
from 24-27 May 1966/

SOURCE: Konferentsiya po problemam kosmicheskoy meditsiny, 1966. Problemy
kosmicheskoy meditsiny. (Problems of space medicine); materialy konferentsii,
Moscow, 1966, 384-385

TOPIC TAGS: group dynamics, cosmonaut training, cosmonaut selection, space
psychology

ABSTRACT: In 1963, two of the authors described a device which could be used to
evaluate the behavior of a group of three men during interdependent
activity. It was shown that the device could reflect the activity of the
group with great accuracy and that evaluation results agreed with some
sociological tests despite its simplicity of design. Consequently, a device
which could evaluate the interdependent activity of a group of eight men

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L 08837-67

ACC NR: AT6036683

was constructed. It consists of eight small, identical panels each consist-
ing of a dial and potentiometer. The experimenter is provided with a
large panel consisting of 8 dials which act as doubles of the individual
ones. In addition, he has a device indicating the sum of the deviations of
all the dials from zero. There are switches permitting exchange between
all potentiometers and dials on a second section of the panel.

After standardizing an exchange coefficient, the experimenter feeds
current to the subjects' dials. They in turn attempt to reset the dial on
zero according to instruction. Each subject sees only his own dial which
he himself can only manipulate. When interexchange coefficients are not
equal to zero, the problem has an interdependent nature in that all remain-
ing dials move, besides that of the individual subject; each individual dial
reflects the disposition of all the potentiometers. This set-up is portable,
fitting into two carrying cases and is powered by 4 batteries (40 mamp).

From preliminary experiments it was found that a number of basic
situations common to a three-man group are not encountered in the larger,
eight man group. The presence of a leader, or group of leaders is
perhaps necessary. The device can be used to execute commands, break
a group down into separate subgroups, and for a number of other experi-

Card 2/3

L. 08037-67

ACC NR: AT6036683

ments. It seemed desirable to construct special biorecording systems, which could be used in concert with this set-up.

Finally, a reference formula determining the dial reading on the i panel αi $(i = 1, 2, \ldots v)$ is given:

$$L_i = \sum_{k=1}^{6} a_{ik} x_k$$

Here, x_k is the deviation from zero of the potentiometer on the k panel and α_i is the coefficient of the influence of the k potentiometer on the dial. The sum of indicator readings are:

$$\alpha_{\varepsilon} = \sum_{i=1}^{6} \sigma_i |a_i|$$

Here δ_i equals zero or one and indicates the position of the additional switch on the panel, which permits the exclusion of some of the dials from the total. /W. A. No. 22; ATD Report 66-116/

SUB CODE: 05 / SUBM DATE: 00May66

Card 3/3

KACHURIN, L.G.; TOLSTOBROV, B.Ya.; USHAKOV, V.M.; YALYNYCHEV, N.S.

Stationary automatically self-balancing thermogradiograph.
Trudy Len. gidromet. inst. no.15:161-170 '63.

Unbalanced field thermogradiograph. Ibid.:171-179
(MIRA 17:1)

USHAKOV, V. N.

USHAKOV, V. N.: "Measuring the velocity of the stream in a high-vacuum steam-oil pump". Moscow, 1955. Min Higher Education USSR. Moscow Engineering-Physics Inst. (Dissertation for the Degree of Candidate of TECHNICAL Sciences)

SO: Knizhnaya Letopis' No. 51. 10 December 1955

SOV/97-58-9-13/13

AUTHOR: Ushakov, V.N., Engineer

TITLE: Determining Geometrical Characteristics of Cross-sections of Pre-stressed Reinforced Concrete Elements (Opredeleniye geometricheskikh kharakteristik poperechnykh secheniy predvaritel'no napryazhennykh zhelezobetonnykh elementov)

PERIODICAL: Beton i Zhelezobeton, 1958, Nr 9, p 360 (USSR)

ABSTRACT: Whilst designing reinforced concrete constructions, it is often necessary to devise geometrical characteristics of the calculated cross-sectional forms. This article gives tables which should simplify and systematise these calculations. The given cross-sectional forms are first sub-divided into triangles and rectangles (Table 1). The sequence of the calculation is given in Table 1. After operations indicated in the above table, the centre of gravity is established and moment of inertia of the given section is found. Further calculation is carried out using formulae from "Instructions on Design of Pre-stressed Reinforced Constructions" (SN 10-57). There is a short example to illustrate the use of the table.

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SOV/97-58-9-13/13

Determining " Geometrical Characteristics of Cross-sections of Pre-stressed Reinforced Concrete Elements

Various formulae are given.
There are 2 tables and 2 figures.

Card 2/2

SOV/120-59-5-20/46

AUTHORS: Baryshova, N.M. and Ushakov, V.N.

TITLE: Measurement of the Velocity of the Stream Issuing from
              the Throttle of a High-vacuum Pump

PERIODICAL: Pribory i tekhnika eksperimenta, 1959, Nr 5,
              pp 94 - 98 (USSR)

ABSTRACT: The velocity of a gas stream issuing from a throttle
              can be measured by the method proposed by Rodin in 1950.
              In this method, an ionisation pulse is applied to the gas
              stream at a certain known cross-section. At another
              cross-section, the ions are "extracted" from the stream
              and the transit time between the ionising pulse and the
              test cross-section is determined. In this way, the
              velocity can be evaluated. A special experimental equip-
              ment, shown in Figure 1, based on the above principle,
              was constructed. The throttle 2 of the equipment is
              fixed to a special tube 3 which can slide horizontally
              inside another tube 1 . At its other end, the tube 3
              is terminated with a plug 4 , having an aperture in the
              centre. The vapour to the tube and the throttle is

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Measurement of the Velocity of the Stream Issuing from the Throttle
of a High-vacuum Pump

introduced via a slot having a width of 10 mm and a
length of 40 mm. The throttle can be horizontally dis-
placed by means of a screw drive 5 , which passes through
the aperture in the plug. The position of the throttle
is indicated by a calibrated. scale. The temperature of
the vapour is measured before the critical cross-section
of the throttle by means of a copper-constantan thermo-
couple 8 . During the measurements, the equipment is
continuously evacuated to a pressure of 10^{-4} mm Hg. The
equipment is fitted with an ion collector 12 , which is
in the form of a wire ring having a diameter of 24 mm.
The plane of the collector is perpendicular to the axis of
the throttle. The transit time of the ion cloud is
measured oscillographically. The instant of the appearance
of the ions at the collector is determined by determining
the maximum current in the circuit of the collector. The
measurements were carried out for a constant distance
between the ionising electron beam 18 and the collector,
the distance being 16 mm. The distance between the end of

Card2/4

SOV/120-59-5-20/46

Measurement of the Velocity of the Stream Issuing from the Throttle
of a High-vacuum Pump

the throttle and the ionising beam was carried from 2.5
to 35 mm. The temperature of the vapour entering the
critical cross-section of the throttle was kept constant
and the measurements were effected at temperatures of
180, 190, 200 and 210 °C. The experimental results are
illustrated in Figures 4 and 5. These illustrate the
dependence of the gas velocity on the distance between the
output end of the throttle and the ionising beam for
various temperatures and various throttles. From the
measurements, it is found that the method is suitable for
the determination of the velocity of the oil-vapour stream
issuing from the throttle of a high-vacuum pump. It was
found that in the vicinity of the output   end   of the
throttle, the velocity is substantially constant. This
can be referred to as the "core" of the stream. The length
of the core depends on the temperature of the vapour. The
velocity in the core is 225 ± 25 m/sec over temperatures
ranging from 180 - 220 °C; the velocity is independent of

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SOV/120-59-5-20/46

Measurement of the Velocity of the Stream Issuing from the Throttle
of a High-vacuum Pump

the expansion ratio of the throttle. Beyond the
core, the velocity rapidly increases and reaches
the value of 800 m/sec. The adiabatic coefficient
could be determined from this velocity and it was
found that for the vapours of the oil-type D1-A it
was 1.04.

There are 5 figures, 1 table and 3 English references.

SUBMITTED: August 8, 1958

Card 4/4

(A) L 10993-66   EWT(d)/EWP(v)/EWP(k)/EWP(h)/EWP(1)
ACC NR: AP5028529   SOURCE CODE: UR/0286/65/000/020/0124/0124

INVENTOR: Smirnov, V. D.; Ushakov, V. N.; Spivak, M. A.; Gokhbaum, F. A.; Braylovskiy,
M. I.; Astrova, T. I.

ORG: none

TITLE: Hydraulic cylinder for a high-capacity press. Class 58, No. 175823 [announced
by Experimental Construction bureau of the central scientific research institute
of building construction (Eksperimental'no-konstruktorskoye byuro tsentral'nogo nauchno-
issledovatel' okogo instituta stroitel'nykh konstruktsiy)

SOURCE: Byulleten' izobreteniy i tovarnykh znakov, no. 20, 1965, 124

TOPIC TAGS: press, hydraulic press, high capacity press, press cylinder, cylinder
design

ABSTRACT: This Author Certificate introduces a hydraulic cylinder for a high-ca-
pacity press. The cylinder (see Fig. 1) consists of inner metal shell 1, encased in
a reinforced-concrete housing. Expansion joint 2 separates top 3 and bottom 4 of
the housing to reduce the internal stresses. Orig. art. has: 1 figure.   [DV]

Card   1/2

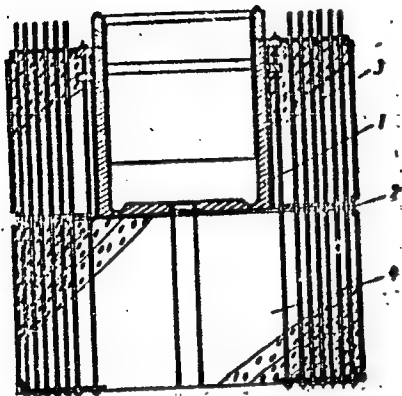L 10993-66

ACC NR: AP5028529

Fig. 1. Hydraulic cylinder

1 — metal shell; 2 — expansion joint;
3 — top of the housing; 4 — bottom of the
housing.

SUB CODE: 13/ SUBM DATE: 27May64/ ATD PRESS: 4171

Card   2/2

USHAKOV, V. P.

Forests and Forestry.

Why the Dubravskaia forest conservation station did not fulfill the production plan. Les.khoz. no. 5, 1952.

9. **Monthly List of Russian Accessions**, Library of Congress, __August__ 1953/2 Unclassified.

1. USHAKOV, V. P.

2. USSR (600)

4. Forests and Forestry

7. What is shown by analysis of the cost of growing a stand of trees. Les i step'
   4, no. 10, 1952.

9. Monthly List of Russian Accessions, Library of Congress, January, 1953. Unclassified.

USHKALOV, V.P.

Determining compressibility factors of undisturbed structural soils
thawing out under pressure. Trudy NII nsn.i fund. no.26:38-52 '55.
(MLRA 9:8)

(Soil mechanics)

USHKALOV, V.P.

Mean values of the specific weight of soils. Trudy NII osn.i fund.
no.26:92-98 '55.   (MLRA 9:8)
                          (soil mechanics)

USHAKOV, V. S.

"High Pile Grillage in Bridge Piers." Thesis for
Degree of Cand. Technical Sci. Sub 7 Feb 50,
Moscow Order of Labor Red Banner Engineering
Construction Inst imeni V. V. Kuybyshev.

Summary 71, 4 Sep 52, Dissertations Presented
for Degrees in Science and Engineering in Moscow
in 1950. From Vechernyaya Moskva. Jan-Dec 1950.

USHAKOV, V.S.

BASS, M.G., inzhener; KARAGODIN, V.L., inzhener; MOLCHANOV, Yu.A., inzhener; MALITSKIY, S.I., inzhener; KHAZANOV, V.Ye., inzhener; USHAKOV, V.S., inzhener.

Collector with driven in sheet-piled walls. Gor.khoz.Mosk. 31 no.9:38-40 S '57. (MIRA 10:9)

(Moscow--Sewers, Concrete)

USHAKOV, V.V.

Combined poisoning from arsenic and chromium. Sud.-med.ekspert.
3 no.1:58-59 Ja-Mr '60.   (MIRA 13:5)

1. Kafedra sudebnoy meditsiny (zav. - prof. V.M. Smol'yaninov)
II Moskovskogo meditsinskogo instituta imeni N.I. Pirogova.
   (ARSENIC POISONING)   (CHROMIUM--TOXICOLOGY)

MEL'NIKOV, Yuriy Leonidovich; USHAKOV, Vasiliy Vasil'yevich,
    STOYANOV, B.G., red.

    [Clinical fundamentals of medicolegal expertise in
    concussion of the brain] Klinicheskie osnovy sudebno-
    meditsinskoi ekspertizy pri sotriasenii mozga. Moskva,
    Meditsina, 1964. 132 p.   (MIRA 17:9)

USHAKOV, V.V.

State of expertise on the fertilization capacity in males.
Sud.-med.ekspert. 7 no. 2:33-36 Ap-Je '64.   (MIRA 17:7)

1. Kafedra sudebnoy meditsiny (zav.- dotsent A.A.Serdyukov)
Ryazanskogo meditsinskogo instituta imeni Pavlova.

KAS'YANOV, V.A. [Kas'ianov, V.O.]; USHAKOV, V.V.

Equations describing average turbulent motion for laminar
electrohydrodynamic flow. Dop. AN URSR no.11:1448-1451 '64.
(MIRA 18:1)

1. Kiyevskiy institut Grazhdanskogo vozdushnogo flota.
Predstavleno akademikom AN UkrSSR I.T. Shvetsom [Shvets', I.T.].

USHAKOV, V.V. (Staryy Oskol).

A class of problems on motion. Mat. v shkole no.1:93-94 Ja-F '58.
(Algebra—Problems, exercises, etc.)   (MIRA 11:1)

TASHIROV, S.M.; USHAKOV, V.V.

Results of fractures of the skull 'n children. Trudy
N.V. Sklif. 8:94-98 '63.

1. Kafedra rentgenologii i radiologii (zav. prof. V.A. D'yachenko)
i kafedra sudebnoy meditsiny (zav. prof. V.M. Smol'yaninov)
Moskovskogo gosudarstvennogo meditsinskogo instituta i kafedra...

SMYSHLYAYEV, V.K. (Yoshkar-Ola);BAYTAL'SKIY, M.M. (Odessa);IVANOVA, Zh. (Vratsa,
    Bolgariya);USHAKOV, V.V. (Staryy Oskol);PRESMAN, A.A. (Sverdlovsk);
    LEVIN, M.N. (Tartu);BRIGADIN, I.Ya. (Moskva);LEVIN, M.I. (Tartu);
    KASHIN, B.I. (Kalininskaya obl.)

    Problems for students. Mat. v shkole no.6:90-91 N-D '59   (MIRA 13:3)
        (Mathematics--Problems, exercises, etc.)

MOVSESYAN, L.A. (Yerevan);KASHIN, B.I. (Ostashkov);USHAKOV, V.V. (Belgorodskaya obl.);KHAMZIN, Kh.Kh. (Sterlitamak);CHERNYSHEVICH, I.V.(Kopyl'); PALATNIK, G.S. (Vinnitsa);LEYBMAN, M.R. (Sverdlovsk);PEVZNER, S.L. Komsomol'sk-na-Amure)

Problems. Mat. v shkole no.6:91 N-D '59   (MIRA 13:3)
     (Mathematics--Problems, exercises, etc.)

USHAKOV, V.V.

Extracurricular activities in physics. Fiz.v shkole 15 no.6:91-92
N-D '55.
(MIRA 9:2)

1. 45-ya srednyaya shkola Orenburgskoy zh.d. st.Aktyubinsk.
(Physics--Study and teaching)

L6464-66   EWT(m)/T/EWA(m)-2

ACC NR: AP5025258   SOURCE CODE: UR/0386/65/002/004/0182/0185

AUTHOR: Ushakov, V. V.

ORG: Kharkov State University im. A. M. Gor'kiy (Khar'kovskiy gosudarstvennyy univer-sitet)

TITLE: Concerning the difference between the muonic and electronic neutrino

SOURCE: Zhurnal eksperimental'noy i teoreticheskoy fiziki. Pis'ma v redaktsiyu (Prilozheniye), v. 2, no. 4, 1965, 182-185

TOPIC TAGS: neutrino, muon, meson, antineutrino, particle interaction

ABSTRACT: Since the main experimental support for the hypothesis that the muonic and electronic neutrinos are different is the absence of the $\mu \to e + \gamma$ decay, which must result from the $\mu \to e + \bar{\nu} + \nu$ interaction, the author considers two questions: 1) Has it been proved that a neutrino-antineutrino pair is emitted when the meson decays, and consequently that the lepton charges of the negative muon and the electron are equal? 2) Do the results of the CERN experiment (A. A. Mukhin, Experiments with High Energy Neutrinos, Voprosy fiziki elementarnykh chastits [Problems of Elementary Particle Physics], AN ArmSSR, Nor-Amberd, 1964) and the absence of the $\mu \to e + \gamma$ decay require the existence of two types of neutrinos? By citing presently available experimental data the author deduces on the basis of the spectrum of the μe transition, the probabilities of all the allowed decays, and the relative values of the various interaction constants that the conclusion that two identical neutrinos cannot be emitted in meson

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L 6464-66

ACC NR: AP5025258

decay is not yet fully proved. With respect to the neutrino experiment performed at CERN, it is noted that since in this experiment approximately 100% of the neutrino-beam composition went into mesons and only 1% went into electrons, and since focusing of negatively charged particles in the magnetic horn would yield the reciprocal of this ratio, it is desirable, to check on the $v_\mu \neq v_e$ hypothesis, to perform an experiment with a proton target (hydrogen bubble chamber) in an antineutrino beam, when there should be no meson yield. Orig. art. has: 4 formulas.

SUB CODE: NP   SUBM DATE: 21Jun65/   ORIG REF: 004/   OTH REF: 003

nw
Card 2/2

ACCESSION NR: AP4031180   S/0056/64/046/004/1483/1484

AUTHOR: Klyucharev, A. P.; Ushakov, V. V.; Chursin, G. P.

TITLE: The reactions (n, 2n) on Sn-112 and Sn-124 and (n, p) on Sn-112 and Sn-117 at 14.1 MeV

SOURCE: Zh. eksper. i teor. fiz., v. 46, no. 4, 1964, 1483-1484

TOPIC TAGS: tin 112, tin 117, tin 124, neutron reaction, neutron scattering, magic number, isomeric transition

ABSTRACT: In analogy with the research of D. L. Allan (Nucl. Phys. v. 24, 274, 1961) on nuclei with the magic number Z = 28 protons, the authors compare the experimental results for (n, p) and (n, 2n) reactions with the theoretical ones in the case of Z = 50. The cross sections were measured by the method of induced β activity. The separation of the activities due to the (n, p) and (n, 2n) reactions on Sn^{112} was carried out analytically. The experimental accuracy is not worse than 20%. The calculated ratios of the cross section on the metastable level (σ_m) to the cross section on the ground level (σ_g) imply that $\sigma_m/\sigma_g = (2I_m + 1)/(2I_g = 1)$, where I_m and I_g are the spins of the corresponding levels. As can be seen from the

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ACCESSION NR: AP4031180

table, Cameron's set of δ quantities (Can. J. Phys. v. 36, 1040, 1958) does not satisfy the experimentally obtained cross sections. This must be attributed to the influence of shell effects as well as of direct interactions (particularly for Sn^{117}). Orig. art. has: 1 table.

ASSOCIATION: None

SUBMITTED: 15Sep63   DATE ACQ: 07May64   ENCL: 01

SUB CODE: NP   NR REF SOV: 001   OTHER: 003

Card   2/3

ENCLOSURE: 01

ACCESSION NR: AP4031180

Реакция	$\sigma_{эксп}$, мбн	$\sigma_{рассч}$, мбн	Данные других работ	$\dfrac{\sigma_{эксп}}{\sigma_{рассч}}$	σ_m/σ_g, расчет
$Sn^{112}(n, 2n)Sn^{111}$	1610	1660	1500±7% [4]*	1	
$Sn^{124}(n, 2n)Sn^{123g}$	000	450		2	3
$Sn^{112}(n, p)In^{112}$	145	35		4	3
$Sn^{113}(n, p)In^{112m}$	100	27			
$Sn^{117}(n, p)In^{117}$	23	2		11,5	

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